

## Task: Package Management

1. Update your package index
2. Install `htop` (system monitoring tool)
3. Check if `nginx` is installed. If not, list the command you would use to install it (DON'T actually install if you don't have `sudo`)
4. List all currently installed packages and save the output to `~/devops-lab/packages.txt`

### Deliverable:

- Screenshot of package update and `htop` installation
- Text file with installed packages list

## Solution:

### 1. Update your package index

```
[pujan@ip-10-10-1-92 devops-lab]$ sudo dnf check-update
[sudo] password for pujan:
CentOS Stream 9 - BaseOS                               1.6 kB/s | 4.5 kB      00:02
CentOS Stream 9 - BaseOS                               70 kB/s | 8.8 MB      02:08
CentOS Stream 9 - AppStream                             576 B/s | 4.6 kB      00:08
CentOS Stream 9 - AppStream                             98 kB/s | 25 MB       04:23
CentOS Stream 9 - Extras packages                       249 B/s | 5.2 kB      00:21

aardvark-dns.x86_64                                2:1.17.0-1.el9          appstream
at.x86_64                                           3.1.23-13.el9           baseos
bind-libs.x86_64                                   32:9.16.23-35.el9       appstream
bind-license.noarch                               32:9.16.23-35.el9       appstream
bind-utils.x86_64                                  32:9.16.23-35.el9       appstream
chrony.x86_64                                       4.8-1.el9              baseos
cpp.x86_64                                          11.5.0-14.el9          appstream
cups-filters.x86_64                                1.28.7-25.el9          appstream
cups-filters-libs.x86_64                           1.28.7-25.el9          appstream
dmidecode.x86_64                                   1:3.6-2.el9            baseos
dnf-plugins-core.noarch                           4.3.0-24.el9           baseos
elfutils.x86_64                                    0.194-1.el9            baseos
```

### 2. Install `htop` (system monitoring tool)

```
[pujan@ip-10-10-1-92 devops-lab]$ sudo dnf install htop -y
[sudo] password for pujan:
Last metadata expiration check: 0:02:05 ago on Tue 18 Nov 2025 10:24:10 AM +0545.
Dependencies resolved.
=====
Package                               Architecture      Version            Repository          Size
=====
Installing:
 htop                                x86_64            3.3.0-1.el9       epel                198 k
Installing dependencies:
 hwloc-libs                         x86_64            2.4.1-5.el9       baseos              2.1 M
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 2.3 M
Installed size: 3.5 M
Downloading Packages:
(1/2): htop-3.3.0-1.el9.x86_64.rpm                               8.5 kB/s | 198 kB      00:23
(2/2): hwloc-libs-2.4.1-5.el9.x86_64.rpm                       47 kB/s | 2.1 MB       00:45
-----
Total                                                                20 kB/s | 2.3 MB       01:59
Extra Packages for Enterprise Linux 9 - x86_64                  193 kB/s | 1.6 kB       00:00
Importing GPG key 0x3228467C:
  Userid   : "Fedora (epel9) <epel@fedoraproject.org>"
  Fingerprint: FF8A D134 4597 106E CE81 3B91 8A38 72BF 3228 467C
  From      : /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-9
Key imported successfully
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing                :
  Installing               : hwloc-libs-2.4.1-5.el9.x86_64          1/1
  Installing               : htop-3.3.0-1.el9.x86_64              1/2
  Running scriptlet        : htop-3.3.0-1.el9.x86_64              2/2
  Verifying                : hwloc-libs-2.4.1-5.el9.x86_64        2/2
  Verifying                : htop-3.3.0-1.el9.x86_64              2/2
Installed:
  htop-3.3.0-1.el9.x86_64                                hwloc-libs-2.4.1-5.el9.x86_64

Complete!
```

3. Check if **nginx** is installed. If not, list the command you would use to install it (DON'T actually install if you don't have sudo)

To check if **nginx** is installed:

```
nginx -v OR rpm -qa | grep nginx
```

To install it:

```
sudo apt install nginx -y
```

```
[pujan@ip-10-10-1-92 ~]$ sudo apt install nginx -y
[sudo] password for pujan:
[sudo: apt: command not found]
[pujan@ip-10-10-1-92 ~]$ sudo yum install nginx -y
Last metadata expiration check: 0:07:52 ago on Tue 18 Nov 2025 10:24:10 AM +0545.
Dependencies resolved.
=====================================================================================================================================
 Package                                                                           Architecture                               Version                               Repository                               Size
=====================================================================================================================================
Installing:
nginx                                                                              x86_64                                     2:1.20.1-24.el9                       appstream                                36 k
Installing dependencies:
centos-logos-httpd                                                                noarch                                     90.8-3.el9                             appstream                                1.5 M
nginx-core                                                                         x86_64                                     2:1.20.1-24.el9                       appstream                                570 k
nginx-filesystem                                                                   noarch                                     2:1.20.1-24.el9                       appstream                                9.3 k
Transaction Summary
-----
Install 4 Packages

Total download size: 2.1 M
Installed size: 4.3 M
Downloading Packages:
[MIRROR] centos-logos-httpd-90.8-3.el9.noarch.rpm: Curl error (28): Timeout was reached for http://ftp.riken.jp/Linux/centos-stream/9-stream/AppStream/x86_64/os/Packages/centos-logos-httpd-90.8-3.el9.noarch.rpm [Resolving timed out after 30001 milliseconds]
[MIRROR] nginx-1.20.1-24.el9.x86_64.rpm: Curl error (6): Couldn't resolve host name for http://ftp.riken.jp/Linux/centos-stream/9-stream/AppStream/x86_64/os/Packages/nginx-1.20.1-24.el9.x86_64.rpm [Could not resolve host: ftp.riken.jp]
[MIRROR] nginx-core-1.20.1-24.el9.x86_64.rpm: Curl error (6): Couldn't resolve host name for http://ftp.riken.jp/Linux/centos-stream/9-stream/AppStream/x86_64/os/Packages/nginx-core-1.20.1-24.el9.x86_64.rpm [Could not resolve host: ftp.riken.jp]
(1/4): nginx-core-1.20.1-24.el9.x86_64.rpm                                           6.5 kB/s | 570 kB    01:28
(2/4): nginx-filesystem-1.20.1-24.el9.noarch.rpm                                   13 kB/s | 9.3 kB     00:00
(3/4): centos-logos-httpd-90.8-3.el9.noarch.rpm                                    16 kB/s | 1.5 MB     01:38
[MIRROR] nginx-1.20.1-24.el9.x86_64.rpm: Curl error (28): Timeout was reached for https://hkg.mirror.rackspace.com/centos-stream/9-stream/AppStream/x86_64/os/Packages/nginx-1.20.1-24.el9.x86_64.rpm [Operation too slow. Less than 1000 bytes/sec transferred the last 30 seconds]
(4/4): nginx-1.20.1-24.el9.x86_64.rpm                                              311 B/s | 36 kB      01:59
-----
Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
```

4. List all currently installed packages and save them to `~/devops-lab/packages.txt`

```
[pujan@ip-10-10-1-92 ~]$ rpm -qa > ~/devops-lab/packages.txt
[pujan@ip-10-10-1-92 ~]$ cat devops-lab/packages.txt
fonts-filesystem-2.0.5-7.el9.noarch
linux-firmware-whence-20250812-155.el9.noarch
hwdata-0.348-9.20.el9.noarch
xkeyboard-config-2.33-2.el9.noarch
tzdata-2025b-2.el9.noarch
liberation-fonts-common-2.1.3-5.el9.noarch
mesa-filesystem-25.0.7-2.el9.x86_64
hyperv-daemons-license-0-0.44.20190303git.el9.noarch
gnome-control-center-filesystem-40.0-42.el9.noarch
abattis-cantarell-fonts-0.301-4.el9.noarch
yelp-xsl-40.2-1.el9.noarch
mozilla-filesystem-1.9-30.el9.x86_64
google-noto-fonts-common-20201206-5.el9.noarch
google-noto-cjk-fonts-common-20230817-2.el9.noarch
foomatic-db-filesystem-4.0-72.20210209.el9.noarch
cups-filesystem-2.3.3op2-35.el9.noarch
```